

REMARKS

Claims 1-18 and 28-64 have been cancelled. Claim 19 has been amended. Claims 65-78 have been added. Applicants reserve the right to pursue the original claims in this and other applications. Claims 19-27 and 65-77 are now pending. Reconsideration and withdrawal of all outstanding rejections and objections are respectfully requested in light of the foregoing amendments and the following remarks.

A set of replacement drawings is being submitted herewith. The replacement drawings are being submitted to include a reference label “PRIOR ART” to FIGS. 1-3. No other changes are being made. In the specification, paragraph [0029] has been amended, as requested by the Office Action, to include reference to pixels cells having 6T and/or 7T layouts. No new matter has been added.

Claims 19-27 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,326,230 to Pain et al (“Pain”) in view of U.S. Patent No. 6,140,630 to Rhodes et al. (“Rhodes”). The rejection is traversed.

The claimed invention, as embodied by independent claim 19 relates to a method of operating a pixel cell including an act of sweeping charge out of a photoconversion region after an integration period by activating transfer and reset transistors. As such claim 19 has been amended to recite “removing residual charge remaining in said photoconversion device after said charge storage at said charge collection region, wherein said act of removing comprises activating a reset transistor and said transfer transistor prior to a subsequent integration period.”

Neither of the cited references, whether considered alone or in combination, teaches or suggests the unique combination of elements. Specifically, the Office Action proposes that Pain teaches the claim limitation recited above (Office Action at 5), but Applicants disagree. In the passages cited by the Office Action, Pain teaches transferring “additional photocharges in the photoactive region to a power supply node via a region of

the semiconductor substrate.” For example, see col. 3, lines 6-7. Unlike the claimed invention which utilizes a reset and transfer transistor, Pain teaches use of a “second transfer gate 62” for performing this operation. In fact, Pain teaches away from the claimed invention by stating that the “additional photocharges” are taken out of the photoactive region “without passing through the sense node,” which based on Pain’s disclosed pixels means that the reset transistor 74 cannot not be utilized. Only when resetting the sense node 54 does Pain teach utilizing a reset transistor 74.

Further, Rhodes does not cure the deficiencies of Pain as discussed above. Specifically, Rhodes provides no teaching or suggestion of “removing residual charge remaining in said photoconversion device after said charge storage at said charge collection region, wherein said act of removing comprises activating a reset transistor and said transfer transistor prior to a subsequent integration period.” For at least these reasons, withdrawal of the rejection is requested.

Claims 20-27 and 65-72 depend from claim 19 and contain every limitation recited therein. For at least these reasons, claims 20-27 and 65-72 are also allowable.

Similarly, new independent claim 73 recites a method of operating an imager comprising, *inter alia*, “removing residual charge remaining in said photoconversion device by activating said reset transistor and said transfer transistor prior to a second integration period.” For all of the reasons given above regarding the allowability of claim 19, claim 73 is also submitted to be allowable. Claims 74-77 depend from claim 73, contain all the limitations of claim 73, and are also allowable for at least these reasons.

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In view of the above amendment, applicant believes the pending application is in condition for allowance. Favorable action on the application, including claims 19-27 and 65-77, is solicited.

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Respectfully submitted,

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